Title (en)

PROCESS FOR THE RECYCLING OF ELECTRICAL BATTERIES, ASSEMBLED PRINTED CIRCUIT BOARDS AND ELECTRONIC COMPONENTS

Publication

EP 0274059 B1 19920205 (EN)

Application

EP 87117873 A 19871203

Priority

CH 496086 A 19861212

Abstract (en)

[origin: WO8804476A1] For the recycling of electrical batteries, in particular of a mixture of high-power batteries for equipment of any chemical composition, and also of assembled printed circuit boards and electronic components, a pyrolysis of the unsorted mixture is carried out at a temperature between 450 and 650, then an electrolysis of the pyrolysis slag is carried out and subsequently a separation of the electrolysis products and removal of the products accumulating at the electrodes is carried out. In this process, which is economically profitable no environment-polluting residues are produced and an initial sorting of material becomes unnecessary.

IPC 1-7

C22B 1/00; C22B 7/00; H01M 6/52; H01M 10/54

IPC 8 full level

B09B 5/00 (2006.01); **C22B 1/00** (2006.01); **C22B 7/00** (2006.01); **C22B 11/02** (2006.01); **H01M 6/52** (2006.01); **H01M 10/54** (2006.01)

IPC 8 main group level

C22B (2006.01); **H01M** (2006.01)

CPC (source: EP KR US)

C22B 1/005 (2013.01 - EP US); **C22B 7/001** (2013.01 - EP KR US); **C22B 11/025** (2013.01 - EP US); **C22B 13/045** (2013.01 - EP US); **H01M 6/52** (2013.01 - EP KR US); **H01M 10/54** (2013.01 - EP KR US); C22B 1/005 (2013.01 - KR); C22B 11/025 (2013.01 - KR); C22B 13/045 (2013.01 - KR); Y02P 10/20 (2015.11 - EP US); Y02W 30/84 (2015.05 - EP KR US)

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WO2011074948A1; EP0650209A1; CN101898197A; EP0997963A1; EP0421978A1; EP1478042A1; FR2690928A1; EP0412935A1; FR2691980A1; NL2003595C2; EP2508271A2; WO9323579A1; WO9320593A1; TWI426644B; US9023129B2

Designated contracting state (EPC)

AT BE CH DE ES FR GB GR IT LI LU NL SE

DOCDB simple family (publication)

WO 8804476 A1 19880616; AT E72501 T1 19920215; AU 1042088 A 19880630; AU 597464 B2 19900531; BG 60505 B1 19950630; BG 85187 A 19931224; BR 8707567 A 19890221; CA 1323854 C 19931102; CS 274297 B2 19910411; CS 908487 A2 19900814; DD 264716 A5 19890208; DE 3776638 D1 19920319; DK 406688 A 19880901; DK 406688 D0 19880720; EP 0274059 A2 19880713; EP 0274059 A3 19880727; EP 0274059 B1 19920205; ES 2030417 T3 19921101; FI 883698 A0 19880809; FI 883698 A 19880809; FI 92444 B 19940729; FI 92444 C 19941110; GR 3004483 T3 19930331; HU 202017 B 19910128; IE 59264 B1 19940126; IE 873364 L 19880612; IL 84741 A0 19880531; IL 84741 A 19910816; IN 172198 B 19930501; JP S63197592 A 19880816; KR 880008470 A 19880831; KR 960006427 B1 19960515; MX 168761 B 19930607; NO 171289 B 19921109; NO 171289 C 19930217; NO 883619 D0 19880812; NO 883619 L 19880812; OA 08900 A 19891031; PL 150019 B1 19900430; PL 269370 A1 19880818; PT 86348 A 19890117; PT 86348 B 19930831; RO 106045 B1 19930130; SU 1621818 A3 19910115; TR 23132 A 19890410; US 4874486 A 19891017; YU 224187 A 19890228; YU 45475 B 19920528; ZA 879342 B 19890426

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EP 8700751 W 19871203; AT 87117873 T 19871203; AU 1042088 A 19871203; BG 8518788 A 19880809; BR 8707567 A 19871203; CA 554080 A 19871211; CS 908487 A 19871211; DD 31032687 A 19871211; DE 3776638 T 19871203; DK 406688 A 19880720; EP 87117873 A 19871203; ES 87117873 T 19871203; FI 883698 A 19880809; GR 920400841 T 19920505; HU 31388 A 19871203; IE 336487 A 19871211; IL 8474187 A 19871207; IN 1077DE1987 A 19871215; JP 31242887 A 19871211; KR 870014265 A 19871212; MX 972087 A 19871211; NO 883619 A 19880812; OA 59405 A 19880812; PL 26937087 A 19871211; PT 8634887 A 19871211; RO 13484387 A 19871203; SU 4203888 A 19871211; TR 88087 A 19871211; US 12839887 A 19871203; YU 224187 A 19871210; ZA 879342 A 19871211